RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE + TECHNICAL SERVICES

SUBJECT TITLE : ANALYTICAL SERVICES

PERIOD COVERED : OCTOBER - DECEMBER 1988

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KEYWORDS : tipping, seam, glue, filter, gelatin, flavor, charcoal, menthol, licorice, humectant, alu-foil, paper, casing

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1. ASSISTANCE TO FTR

1.1 INCOMING INSPECTION

The objective of Incoming Inspection is to ensure the constant quality of ingredients, filter additives and glues used by FTR and to make sure that each delivery complies with PM specifications. During the reporting period, 94 deliveries were checked by Analytical Services. One was rejected :

- TENSOCHEMA physical mixture of 50% MPEG 550 + 50% MPEG 750, Incoming Inspection sheet 1686: the defect was a light brown color caused during storage by a poor resistance of the drums' inside coating. A replacement shipment was sent in resistant plastic drums. Investigations are currently being made by the supplier to find suitable metal drums.

The Cochise production plant in Onnens had serious trouble grinding the Suchard cocoa peels due to their high fat content. Sieving solved the problems for the peels from Suchard-Lorrach. Investigations to evaluate possible solutions for the Suchard-Berne peels are under way with the collaboration of the supplier.

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1.2 FOIL-MENTHOLATING

Menthol content was routinely determined :

- on alu-foil for 23 various productions of mentholated bobbins for FTR and export,
- on cigarettes for 6 various productions of FTR mentholated brands.

All results complied with specifications.

Based on the last three years' analytical data, tolerances were calculated for the cigarette menthol content of FTR brands. A statistical sampling procedure is being investigated.

1.3 SPECIAL PROBLEMS

Standardisation of menthol solutions

Trials were initiated to solve problems of supplies, workload and quality. The evaluation of the first North Pole prototypes showed a correlation between SFM-A-1 and SFM-D solutions. Further prototypes will be evaluated in January.

Vapor tunnel for Burley casing

Investigations are currently being made to confirm the improvement due to the installation of the above equipment.

Deposit formed in the triacetin-spray-applying-system on KDF 2

The deposit was identified as a PVA polymer probably due to the accidental presence of glue in triacetin.

Electrostatic perforation

Tipping papers from TANN and BENKERT were analysed in order to detect whether their metal content could affect the perforation. Determinations of iron oxide, titanium dioxide and calcium carbonate were made. The results did not point out any appreciable difference between non-perforated and electrostatic perforated papers from the same supplier: either TANN or BENKERT.

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2. ASSISTANCE TO AFFILIATES

FAMA-AC solution

Trials were made to solve problems due to precipitation during storage and consequent blocking of filters during the transfer of the solution from tank to primary. The recipe was modified further to the agreement of Richmond flavor specialists with our proposals.

Block licorice from MENOZZI delivered to PMH

The anti-sticking agent detected at the surface of blocks was identified as palm oil. It will not be used any longer by the supplier.

Humectant analyses at PMG-M

The implementation of the new method based on GC with wide bore column will be finalized in January.

Storage of tobacco batches at PMG-M

Further to the detection of a sour smell from a ML056 batch, analyses and investigations were made. Recommendations on the maximum storage period were sent to PMG.

Foil mentholating for PMG-B

Investigations were made to solve working problems for packaging on GD-X2. A program was set up. Improvement occurred by moving the nozzle to the foil center. Further trials will be aimed at spreading menthol on the whole surface of the paper layer. The effect of the latter will be investigated.

Foil mentholating for PMH

Evaluation of menthol loss during long storage of mentholated bobbins at 35° C is under way.

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3. ASSISTANCE TO HEADQUARTERS AND LICENCEES

Foil mentholating for ATO-Finland

A consumer test is in progress in Finland for the evaluation of Marlboro Menthol produced with mentholated foil.
A suitable alu-foil was supplied by VAASEN for production trials of Belmont Menthol. One bobbin will be mentholated in January 1989.

Chloride in tobacco

Chloride content was determined in tobacco samples of various origins.

Triacetin used at SNTA

Analyses were made to confirm the HENKEL origin. Results were similar to those of HENKEL samples already examined.

RL SLATINA - Yugoslavia

Analyses were made to check the absence of DEG. The latter was not detected.

90-931 PC solution - Egypt

A sample taken from a doubtful drum was examined.
Recommendations were made to destroy the solution.

4. ASSISTANCE TO OTHER GROUPS

Material Testing

Finish oil content and single denier were routinely determined on samples of tow for incoming inspection by both traditional and infraalyser methods.

Additive content of some cigarette papers is being routinely determined to evaluate its effect on paper combustion speed.

Triacetin content was determined in MLK filters from SNTA for quality control.

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Additive and filler content were determined in various cigarette papers :

- from GLATZ and PMD for analytical evaluation,
- from WATTENS for incoming inspection.

A procedure was developed for the determination of surface pH of boards. Tests were made on ALGRO samples.

Manufacturing Services

Base flavor reference samples from PMI were examined for future incoming inspection.

Tonka flavor was examined for project AGATE.

Investigations to set product specifications for glues are currently being made. The situation and plans about glues were presented at the Materials Trials Concept meeting.

Activated charcoal and silicagel content of various plug-space-plug filters by BAUMGARTNER was determined to update specifications.

Investigations are being made to issue safety sheets for all solutions produced at FTR.

Product Research

Analyses of humectants, water, ethanol and sugars were made for the development of an infraalyser method for the incoming inspection of liquid flavors.

Humectant analyses were made on various RL samples for project ORDER.

Product Development

Menthol content of cigarettes was determined for projects ALAIN, JORG and YANN.

Microbiology

Calcium, sodium, potassium and magnesium content was determined in tobacco extracts for project TITANIA.

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Quality Audit

Menthol content was determined in PM and competitors' brands for CIR.

Further to the bad running of SASO smoking lab humidifier, various samples of supply water, drain water and deposits were analysed. The results pointed out a strong electrode corrosion of the defective humidifier.

Process Development

Humectant content of various tobacco samples was determined for projects ADMOIST, CAIMAN, FOX, PICASSO and RODEO.

Carbonate content of LTR samples was determined for project FOX.

Calcium, magnesium, phosphate and silicium dioxide content of dust and stems samples was determined for project PICASSO.

Tobacco Quality Audit

Humectant and silicon dioxide content was routinely determined on samples from various tobacco batches.

An interlaboratory test was made between PME-QA and Park 500 for the determination of humectant content in RL. PG results were similar. Glycerin results of Park 500 were slightly higher than those of PME-QA. Trials will be resumed after technical modifications to be made by Park 500.

5. QUALIFICATION TRIALS

A new product is accepted only if it has successfully passed the following tests and trials :

- Analytical evaluation to examine the product's compliance with PM specifications and German legislation.
- Production of cigarettes and subjective evaluation by Panel B and Panel A.
- Machinability trials.
- Industrial trials.

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5.1 QUALIFICATION OF ALTERNATIVE SUPPLIERS

The following trials were initiated to qualify alternative suppliers of ingredients, filter additives and glues.

- Physical mixture of 50% MPEG 550 and 50% MPEG 750 from BP. A first industrial shipment will be delivered to FTR in January.

- Synthetic menthol from TAKASAGO. Analytical evaluation was successful. Subjective evaluation is planned for the next three months.

- Natural menthol "Glacier Brand" from China, supplied by FUERST DAY LAWSON. Analytical evaluation was successful. Subjective evaluation is planned for the next three months.

- Block and powder licorice from SISTAS. Samples were requested for analytical evaluation.

- Block licorice 447 and 448 from EVD. Analytical evaluation was successful only for sample 448. Trials with 447 were consequently abandoned. Subjective evaluation of 448 is planned for the next three months.

- Propylene-glycol : options to DOW CHEMICAL. Further to the success of their analytical evaluation, the subjective evaluation of propylene-glycols from ARCO-FRANCE, ERDOELCHEMIE and HUELS is planned for the next three months.

- Triacetin Estol 1479 from UNICHEMA : qualification for Raffles. The subjective evaluation was not conclusive and will be resumed.

- Powder licorice from FERTILIZERS & CHEMICALS. Due to taste variations of cigarettes produced at PMG with the first industrial shipment, industrial trials were resumed at FTR to check the effect on taste. The subjective evaluation by Panel A was successful. A decision will be made after the results of the evaluation under way by Panel D.

- Cielok 303-1772 seam glue from NATIONAL STARCH. An industrial trial is under way at FTR.

- 6663-53-E seam glue from PUJADAS. The analytical evaluation was successful. Trials will only be resumed if we are again limited to one supplier.

- Lesso 5067/1 seam glue from LAESSER. Due to problems on Mark 9 at PM-UK with the currently used seam glue, trials were initiated to qualify Lesso 5067/1 for Raffles. Subjective evaluations by Panel A were not conclusive. Trials will be resumed in the next three months.

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- K 5675 D seam glue from SWIFT-UK. As above, trials were initiated for Raffles. The analytical evaluation was not successful.

5.2 QUALIFICATION OF REPLACEMENT PRODUCTS

The possibilities of solving several technical problems were investigated by replacing currently used ingredients, filter additives or glues :

- Lesso 1520 tipping glue from LAESSER. The trials were aimed at decreasing the pressure on the application rolls and getting an easier regulation of the ventilation. Further to the success of an industrial trial, FTR will use Lesso 1520 in replacement of Lesso 1516 G.
  Local confirmation trials were successful at PMH and PMB. They are still under way at PMG.

- Lessoflex B2G gelatin seam glue from LAESSER. The trials to investigate the possible use of gelatin as a natural seam glue are temporarily delayed due to production constraints at PMG-B. They will be resumed in the near future after setting up a program in collaboration with PMG and establishing a protocol with R&D Richmond to determine pyrolytic components from gelatin.

- Lesso 2049 hot melt filter glue from LAESSER. A longer durability of belts is expected. Subjective evaluation is under way.

- PICA activated charcoal RC 328. Due to a finer granulometry than that of the currently used charcoal, machinability and filter quality can be improved. Trials will be resumed for subjective evaluation and determination of the suitable charcoal amount in filters.

- HAARMAN & REIMER synthetic menthol pellets. Less lumping than with the currently supplied crystals is expected. An industrial trial is planned.

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DAT/vep/January 11, 1989
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